

**Work Order ID 474261**

June 26, 2009 11:46:00 AM



Page 1

Item ID: D3391-015

Accept



Setup Start



Revision ID: H

Stop



Item Name: Aft Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: *MR*

Date: 15/7/09

Tooling:

Date:

Run Start



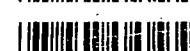
QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

Turn as per Folio FA599

Rev: \_\_\_\_ &amp; Dwg D3391 Rev: \_\_\_\_

*SCRAP*

110

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

120

0.00



HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1-Machine as per Folio FA 599 Rev: \_\_\_\_ &amp; Dwg D3391 Rev: \_\_\_\_ 12-Debur

**Work Order ID 47426**

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Page 2

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Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00




Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start  
Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130  QC Quality Control	QC2- Inspect parts off machine FAI/FAIB  Memo	0.00  0.00							
140  QC Quality Control	QC8- Inspect parts - second check  Memo	0.00  0.00							
150  Skidtubes Skidtubes	Skidtubes  Memo 1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803	0.00  0.00							

# Work Order ID 47426

June 26, 2009 11:46:00 AM

Page 3

Item ID: D3391-015

Accept

Revision ID: H

Item Name: Aft Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:




SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  CNC Bend 1 CNC Delta 100 Bender	BENDING MACHINE - SKIDTUBES  Memo Form as per Dwg D3391	0.00  0.00							
170  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00							
180  Skidtubes Skidtubes	Skidtubes  Memo 1-Open Aft cap pilot hole to .208" as per Dwg D3391 2-Drill Tube as per D3391 using DT8808 (ALL HOLES) 3-Drill and c' sink wearshoe holes as per Dwg D3391 4-C'sink holes for float bag (4 holes per side) as per Dwg D3391 5-Debur 5- Tranfer holes from D	0.00  0.00							

# Work Order ID 47426

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Item ID: D3391-015

Accept

Revision ID: H

Item Name: Aft Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00




Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \_\_\_\_\_  
Stop \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00							
200  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00  0.00							
210  Skidtubes Skidtubes	Skidtubes  Memo 1-Install crossbolt spacers per dwg D3391 A/R Magnabond 6398 batch: _____ 12- Grind flush	0.00  0.00							

# Work Order ID 47426



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June 26, 2009 11:46:00 AM

Item ID: D3391-015

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Setup Start



Revision ID: H

Stop



Item Name: Aft Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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220 QC5- Inspect part completeness to step on W/O 0.00



QC Memo 0.00

Quality Control

230 White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum 0.00



Powdercoat Memo 0.00

Powder Coating

START TIME: \_\_\_\_\_ OVEN TEMPERATURE: \_\_\_\_\_  
FINISH TIME: \_\_\_\_\_

240 QC3- Inspect Part Finish 0.00



QC Memo 0.00

Quality Control

**Work Order ID 47426**

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Item ID: D3391-015

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Revision ID: H

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Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250

0.00



HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Install inserts per dwg D3391 □ 2-Install Aft Cap as per Dwg D3391 □ A/R  
Sikaflex-241/-291 \_\_\_\_\_ □ Sikaflex expiry date: \_\_\_\_\_

260

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

270

0.00



Identify as per dwg &amp; Stock Location: \_\_\_\_\_

Packaging

Memo

0.00

Packaging

# Work Order ID 47426

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Item ID: D3391-015

Accept

Revision ID: H

Item Name: Aft Tube Assembly

Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

W 10-05-04

June 26, 2009 11:32:32 AM

**Parent Item:** D3391-015RevH

**Parent Item Name:** Aft Tube Assembly

**Comments:**

**Start Date:** 15/07/2009

**Required Date:** 03/08/2009

**Start Qty: 1.00**

**Required Qty: 1.00**

[illegible]



# Picklist Print

June 26, 2009 11:32:32 AM

Work Order ID: 47426

Parent Item: D3391-015RevH

Parent Item Name: Aft Tube Assembly











Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3537-7RevC 		Manufactured	No			250	Each	0.0000	1.0000 			
Wearpad D3553-1RevA 		Manufactured	No			250	Each	0.0000	1.0000 			
Gasket D3553-3RevA 		Manufactured	No			250	Each	0.0000	1.0000 			
Gasket D3670-4-200RevA 		Manufactured	No			250	Each	0.0000	14.0000 			
SPACER D3672-1RevB 		Manufactured	No			250	Each	0.0000	2.0000 			
Phenolic Washer												

Date: Thursday, 23/04/2009 3:29:45 PM  
 User: Julie Dawson

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 412 FLOAT SKIDTUBE
Job Number	: 47426		
Estimate Number	: 11437		
P.O. Number	:	Part Number	: D3391015
This Issue	: 23/04/2009 S.O. No. :	Drawing Number	: D3391 REV H
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: // Type : SKIDTUBES	Drawing Revision	: H
Previous Run	: 37688	Material	:
Written By	:	Due Date	: 10/05/2009 Qty: 1 Um: Each
Checked & Approved By	: <u>JD 09.04.24</u>		
Comment	: est rev A 05.12.13 New issue EC		
	: est rev B 06.02.09 Dwg @ revD EC		
	: est rev C 07.03.13 dwg @ revF ec		
	: est rev D 07.10.31 ecn 1053P EC		
	: Est Rev:E ECN 1056 07-11-13 DD verified by: EC		
	: Est Rev:F 08-09-10 revH as per dwg DD verified by:EC		

## Additional Product

Job Number:



Seq. #: Machine.Or.Operation: Description :

1.0 D6014090 ALUMINUM EXTRUSION



Comment: Qty.: 1.0000 f(s)/Unit Total: 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty Part Number Description Batch

1 D6014-090 Extrusion B42768

Identify as D3391-3

Q.m 09.05.12 @

2.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599 Rev: AA & Dwg D3391 Rev: H

Q.m 09.05.12 @

3.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

Q.m 09.05.12 @

4.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

1-Machine as per Folio FA 599 Rev: AA & Dwg D3391 Rev: H

2-Deburr

8/09/06/18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR: <i>I</i>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 23/04/2009 3:29:45 PM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 47426

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

5.1 09/06/19

7.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

u 9-6-22

8.0

BENDING

BENDING MACHINE - SKIDTUBES



Comment: NC Bender

Form as per Dwg D3391

19-6-22

① 19-6-22

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

2° 4.9°  
h = 4.25"

8 09/06/22 (X1)

10.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill Tube as per D3391 using DT8808 (ALL HOLES)

3-Drill and c' sink wearshoe holes as per Dwg D3391

4-C'sink holes for float bag (4 holes per side) as per Dwg D3391  
Deburr

5- Tranfer holes from D3391-013 for electric step in tube

10-2-17  
PC

11.0

QC5

INSPECT WORK TO CURRENT STEP


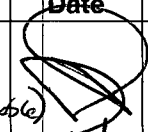
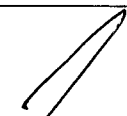
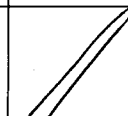
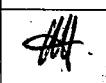

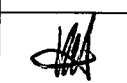


Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
0906-22	10.0	the aft cap holes were drilled 0.140" too much towards the aft. Jig was not positioned correctly.  Rec	 09/04/22	drill the float bag holes as per dwg, NOT locating off of the aft cap holes (aft cap holes acceptable)  see attached e-mail.	 09/04/22		 09/04/22	 09/06/22
10.04.22	10	FLOAT HOLES DRILLED OFF MIS-LOCATED CAP HOLE. 0.140" TOO FAR AFT.	 10.04.22	SCRAP TUBE. TR DOESN'T ALLOW HOLES TO BE MOVED AFT	 10-5-3		 10.04.22	

NOTE: Date & initial all entries

Date: Thursday, 23/04/2009 3:29:45 PM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 47426

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

13.0

D36704200

SPACER



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

SPACER

Batch: \_\_\_\_\_

14.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install crossbolt spacers per dwg D3391

A/R Magnabond 6398 batch: \_\_\_\_\_

2- Grind flush

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

16.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME: \_\_\_\_\_

OVEN TEMPERATURE: \_\_\_\_\_

FINISH TIME: \_\_\_\_\_

17.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

18.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Aft Cap

Batch: \_\_\_\_\_

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 23/04/2009 3:29:45 PM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 47426

Part Number: D3391015

Job Number:



Seq. #:	Machine Or Operation:	Description :
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19.0	D35371	Wearpad
------	--------	---------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPAD

Batch: \_\_\_\_\_

20.0	D35377	Wearpad
------	--------	---------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearpad

Batch: \_\_\_\_\_

21.0	D35531	Gasket
------	--------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

Batch: \_\_\_\_\_

22.0	D35533	Gasket
------	--------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

Batch: \_\_\_\_\_

23.0	D36721	Phenolic Washer
------	--------	-----------------



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PHENOLIC WASHER

Batch: \_\_\_\_\_

24.0	ALS41032130	Insert
------	-------------	--------



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

INSERT

Batch: \_\_\_\_\_

or equivalent per

QSI 017



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 23/04/2009 3:29:45 PM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 47426

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

ALS41032225

Insert



Comment: Qty.: 12.0000 Each(s)/Unit Total : 12.0000 Each(s)

INSERT

Batch: \_\_\_\_\_

or equivalent

per QSI 017

26.0

ALS4428165

Inserts



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Inserts

Batch: \_\_\_\_\_

27.0

AN3C4A

BOLT



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Bolt

Batch: \_\_\_\_\_

28.0

AN3C5A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: \_\_\_\_\_

29.0

AN960C10L

washer



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

WASHER

Batch: \_\_\_\_\_

30.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Install inserts per dwg D3391

2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291 \_\_\_\_\_

Sikaflex expiry date: \_\_\_\_\_

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 23/04/2009 3:29:45 PM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 412 FLOAT SKIDTUBE

Job Number: 47426

Part Number: D3391015

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

31.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

32.0

PACKAGING 1

PACKAGING RESOURCE #1 •



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

33.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 474240
<b>Description:</b> Float Skidtube (412)		<b>Part Number:</b> D3391-3
<b>Inspection Dwg:</b> D3391	<b>Rev:</b> G	<b>Page 1 of 1</b>

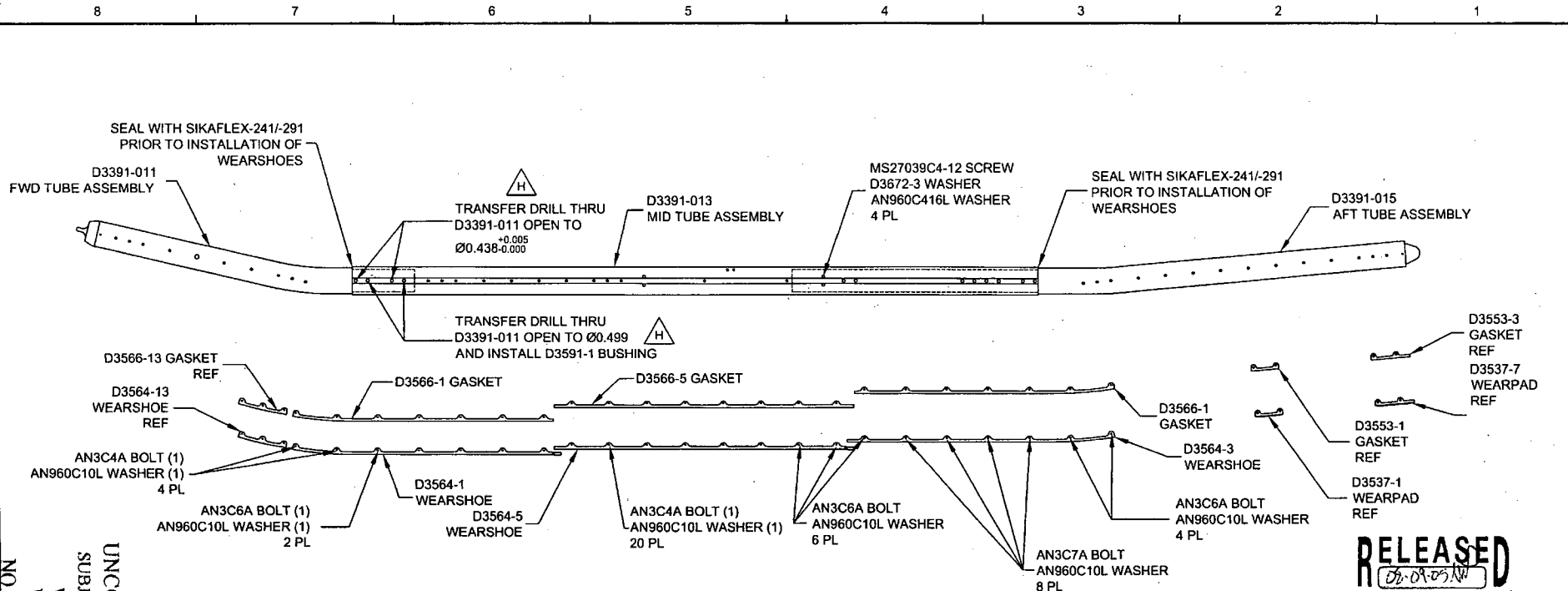
### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
14.000	+/-0.010	14.000	✓			
3.500	+/-0.010	3.497	✓			
88.93	+/-0.030	88.930	✓			
44.995	+/-0.030	44.995	✓			
3.200	+/-0.010	3.200	✓			
1.526	+0.000/-0.030	1.514	✓			
0.200	+/-0.010	.200	✓			
7.500	+/-0.010	7.496	✓			
27.750	+/-0.010	27.750	✓			
31.750	+/-0.010	31.750	✓			
35.250	+/-0.010	35.250	✓			
3.300	+/-0.010	3.310	✓			
0.200	+/-0.010					
3.520	+/-0.010	3.524	✓			
0.687	+0.010/-0.000	.692	✓			
R0.062	+/-0.010	.062				
Ø0.484	+0.005/-0.001	.489				

<b>Measured by:</b> QM / SL	<b>Audited by:</b> SL	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 09-05-12 / 09-06-14	<b>Date:</b> 09/06/19	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	



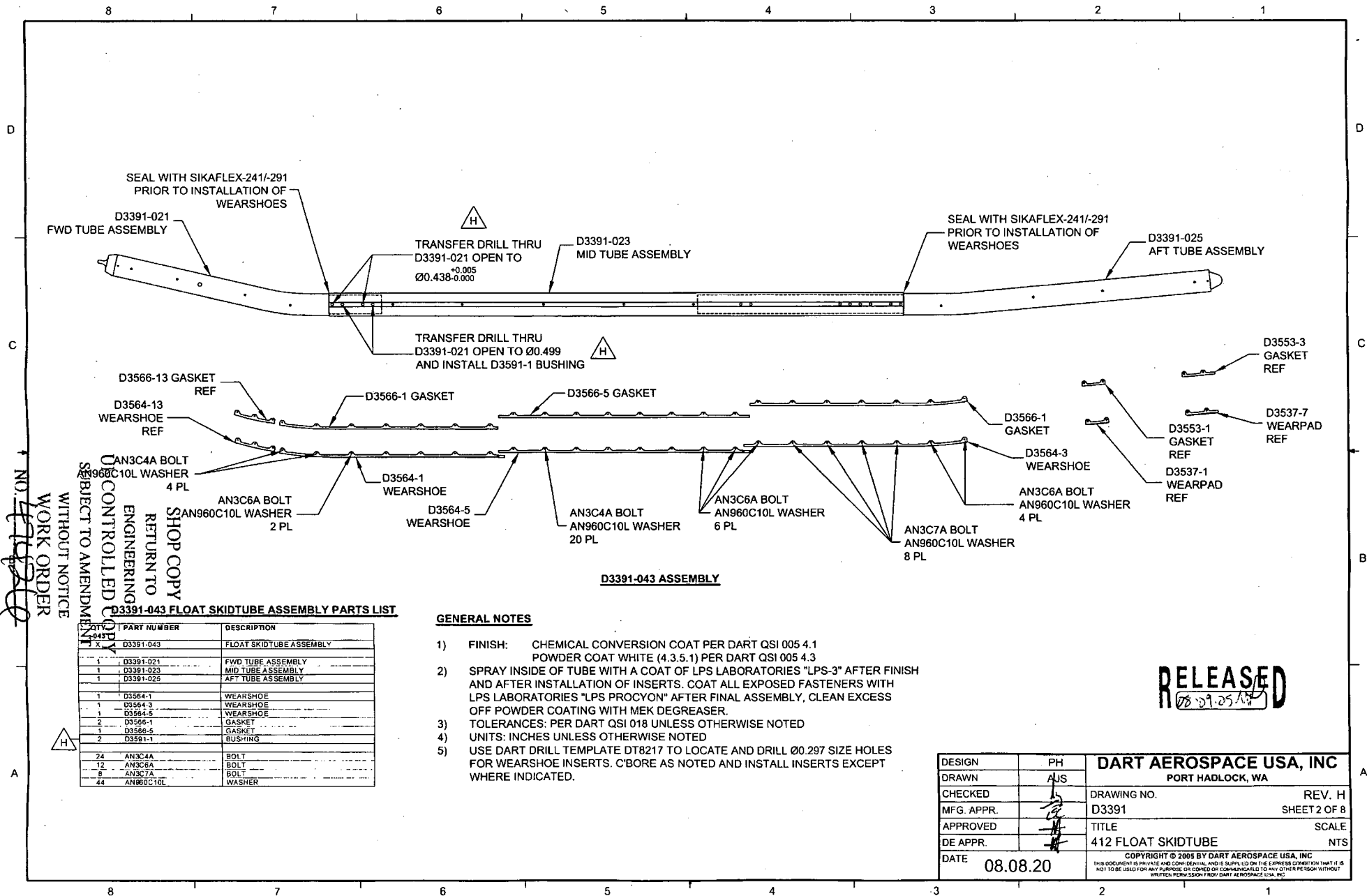
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D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST		
QTY	PART NUMBER	DESCRIPTION
1	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

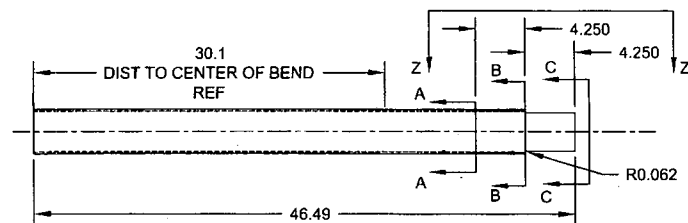
#### GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH  
AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH  
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES  
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT  
WHERE INDICATED.

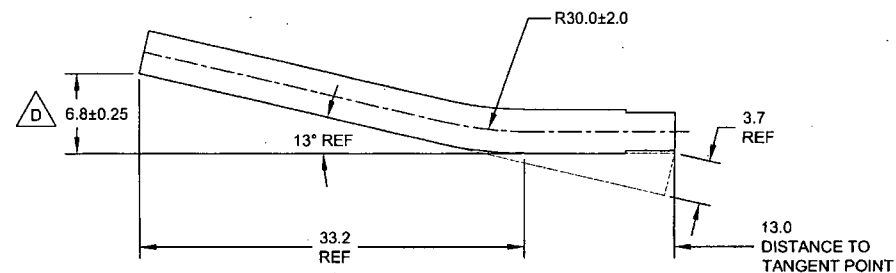
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
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DE APPR.		412 FLOAT SKIDTUBE	NTS
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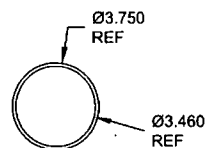




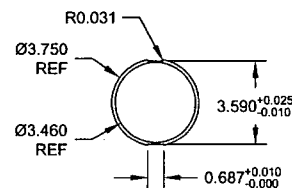
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



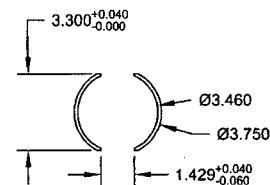
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



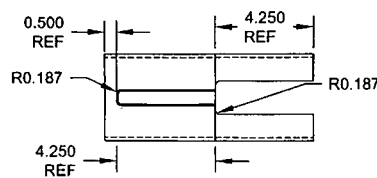
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**SECTION B-B**  
SCALE 2X



**SECTION C-C**  
SCALE 2X



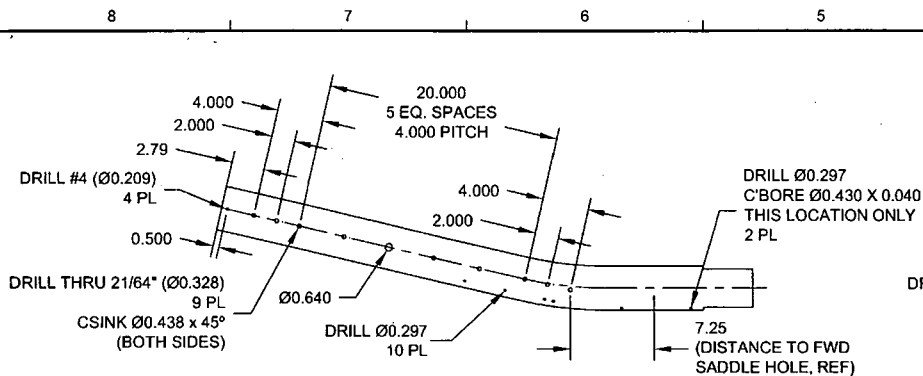
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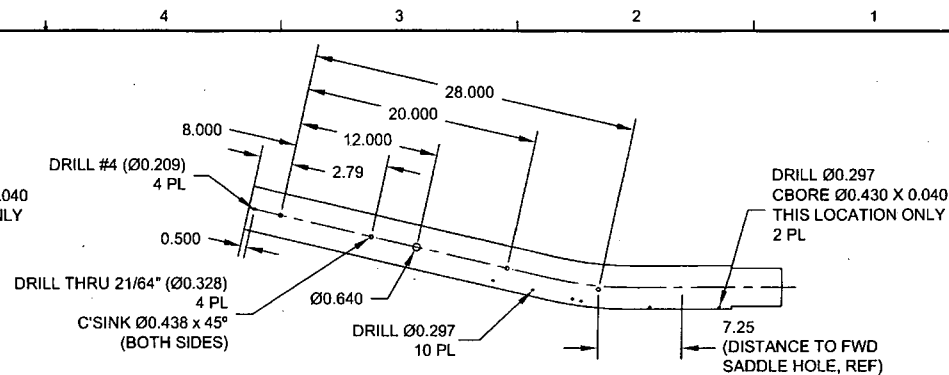
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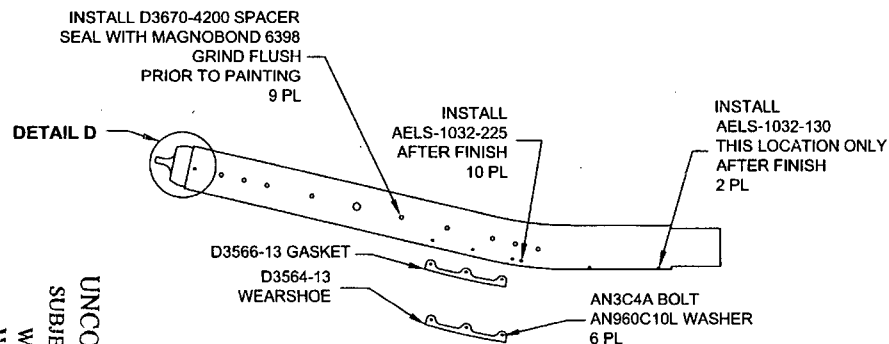




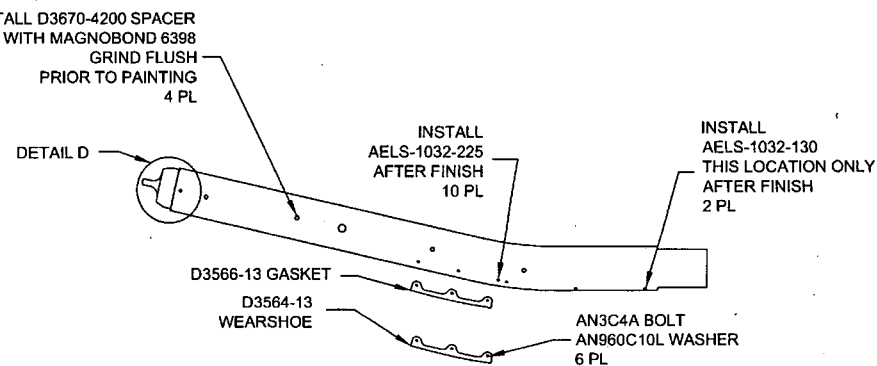
**D3391-011 DRILLING DETAIL**



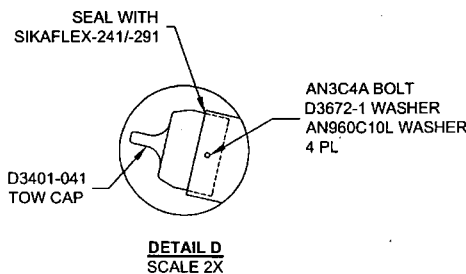
**D3391-021 DRILLING DETAIL**



**D3391-011 ASSEMBLY DETAIL**



**D3391-021 ASSEMBLY DETAIL**



**DETAIL D  
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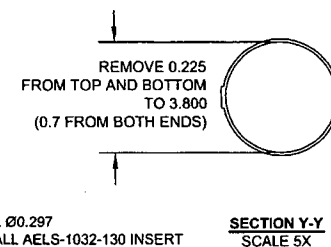
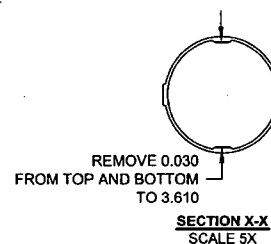
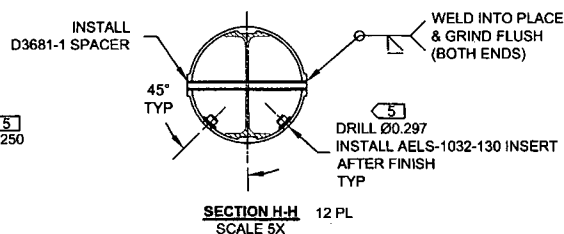
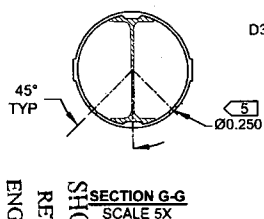
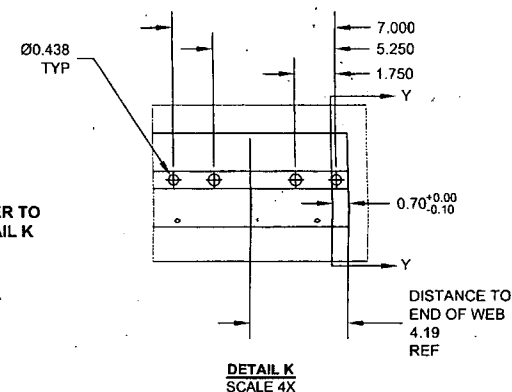
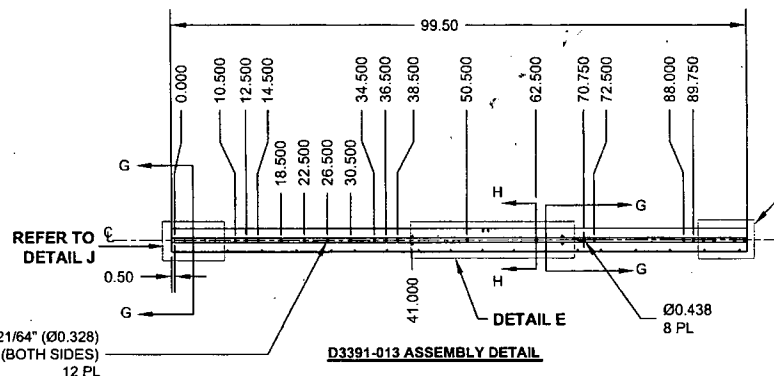
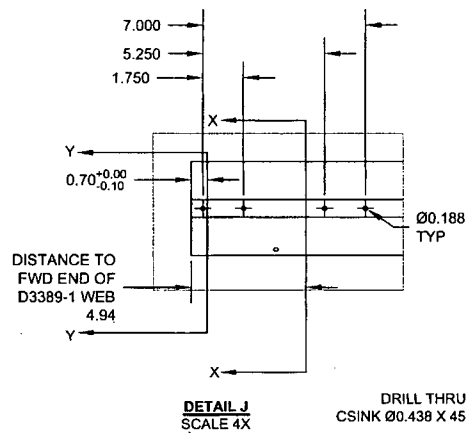
**D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST**

QTY	QTY	PART NUMBER	DESCRIPTION
X	X	D3391-011	FWD TUBE ASSEMBLY
		D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT

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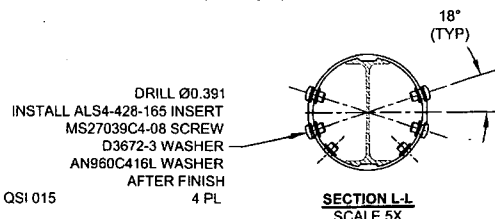
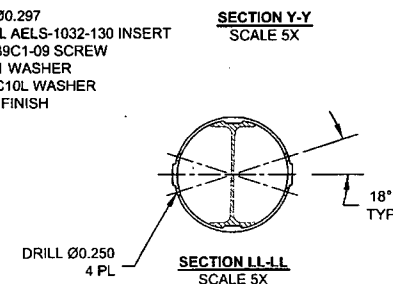
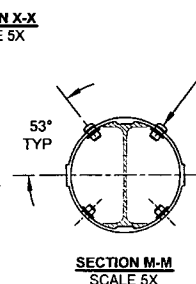
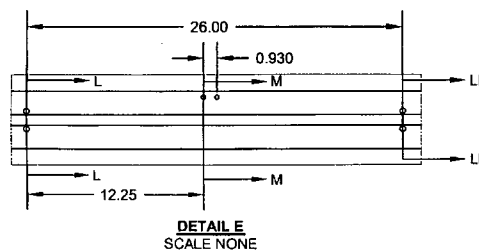
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# **D3391-013 MID-TUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
1	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-08	SCREW
4	MS27039C4-08	SCREW



## **D3391-013 MID TUBE ASSEMBLY**

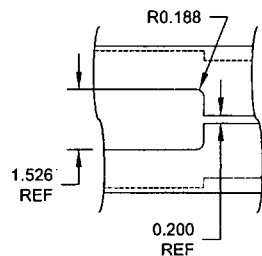
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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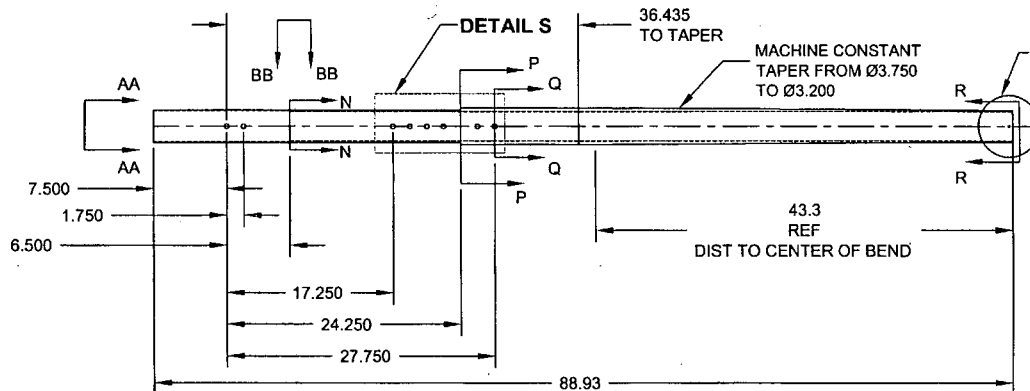
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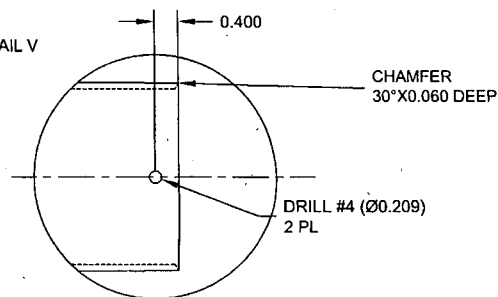




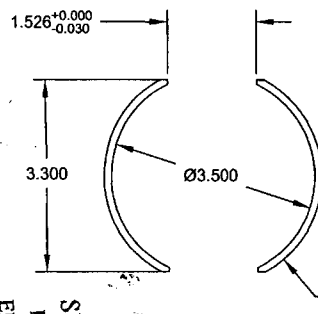
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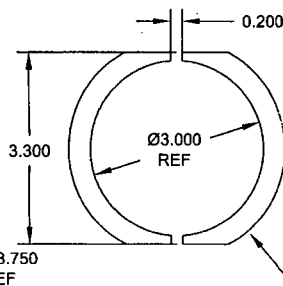
**D3391-3 AFT DRILLING AND CUTTING DETAIL**  
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)



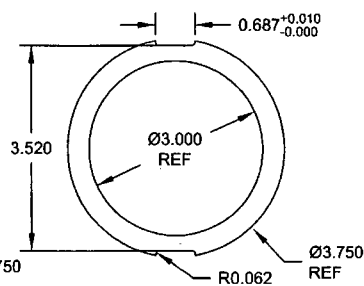
**DETAIL V**  
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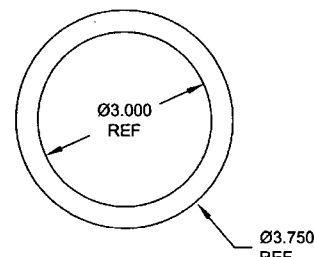
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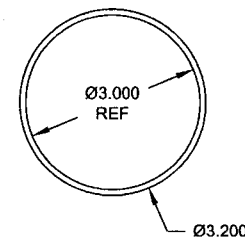
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**SECTION P-P**  
SCALE 6X

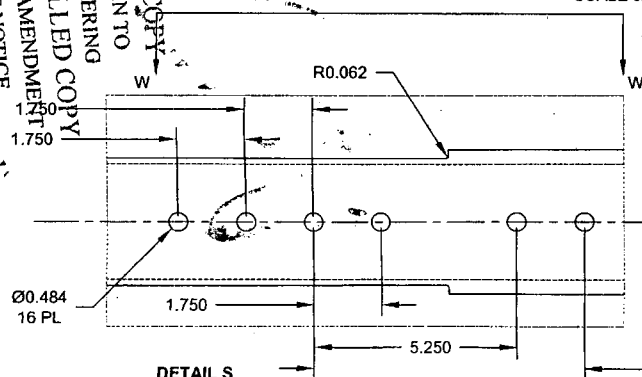


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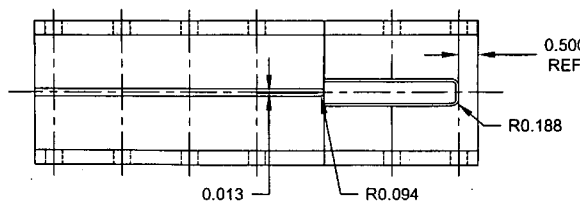


**SECTION R-R**  
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**DETAIL S**  
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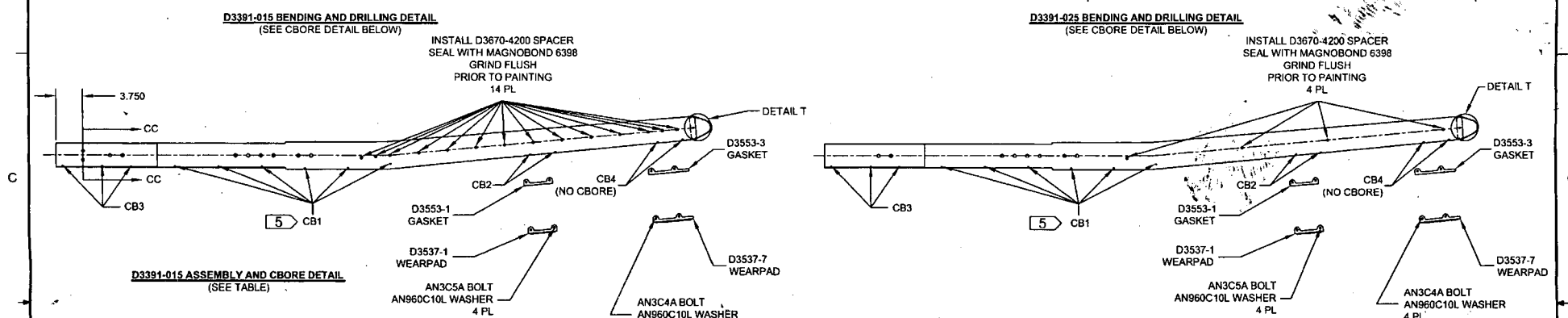
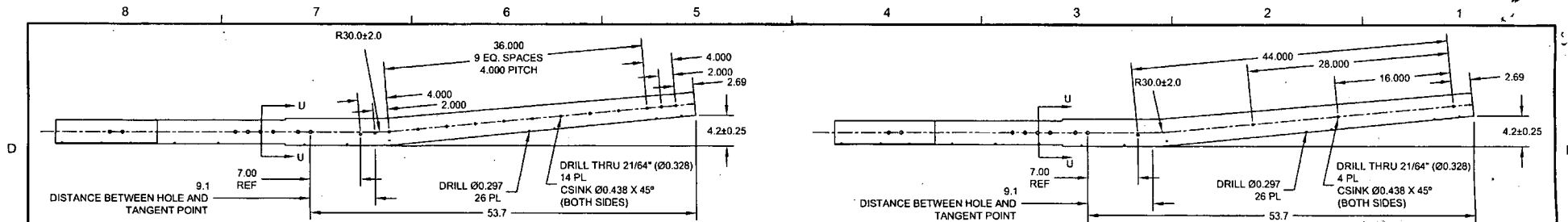


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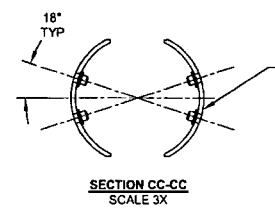
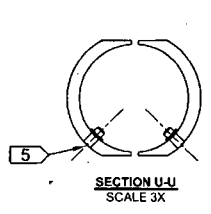


**D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST**

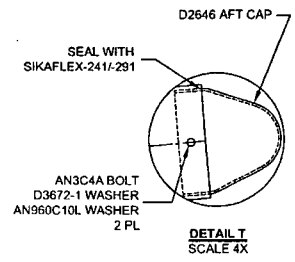
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4	4	ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

C-BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY - D3391-015	QTY - D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130



DRILL Ø0.391  
CBORE Ø0.516 X 0.040 DEEP  
INSTALL ALS4-428-165 INSERT  
4 PL

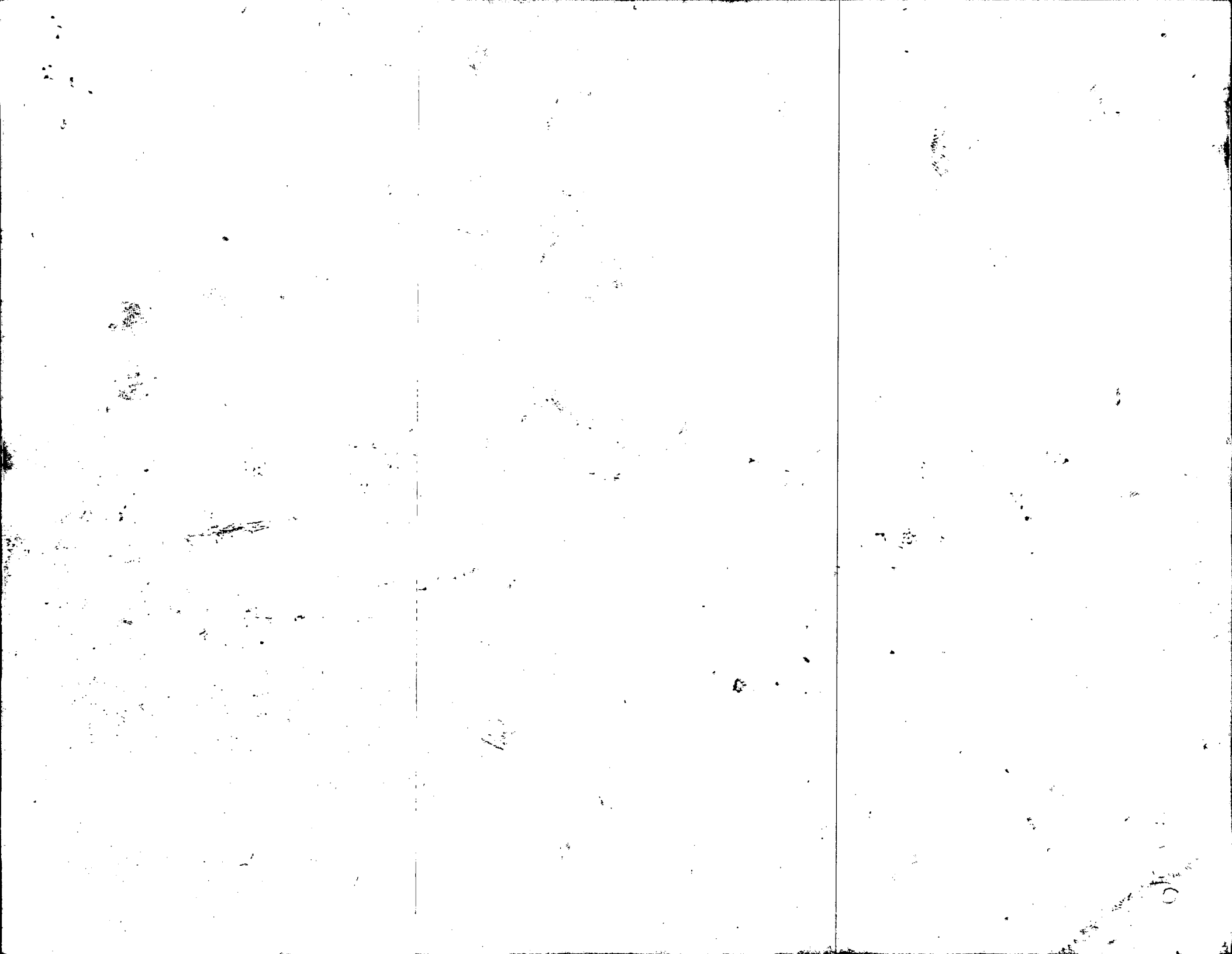


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**Jason Murdoch**

**From:** Jason Murdoch [jmurdoch@dartaero.com]  
**Sent:** June 22, 2009 2:19 PM  
**To:** 'Peter Hum'  
**Cc:** 'Melanie'  
**Subject:** RE: D3391-025 aft tube

10-4 that's what I was thinking as well.  
Thank you very much.

Jason Murdoch

**Qc. Coordinator**

jmurdoch@dartaero.com

---

**From:** Peter Hum [mailto:phum@dartaero.com]  
**Sent:** June 22, 2009 2:08 PM  
**To:** 'Jason Murdoch'  
**Cc:** 'Melanie'; 'L Lacelle'  
**Subject:** RE: D3391-025 aft tube

Jason,

I had a look at the parts affected.....I'm at a loss to figure out what happened. You are correct, the aft cap is non-structural.

The deviation on the location for the aft cap mounting is acceptable. However the float bag hole locations **MUST** be per drawing.

Peter

**From:** Jason Murdoch [mailto:jmurdoch@dartaero.com]  
**Sent:** Monday, June 22, 2009 12:48 PM  
**To:** 'Peter Hum'  
**Cc:** 'Melanie'; 'L Lacelle'  
**Subject:** D3391-025 aft tube  
**Importance:** High

Hi Petey,

Do you mind going to see Jamie Rainey in the skid dept. He somehow drilled the aft cap holes, 0.140" too far back. The aft cap still fits in the hole, but due to the way the jigs locate, it will move the bag holes aft the same way. This can also be corrected by measuring off the aft saddle hole 7", and starting from there.

Let me know, and please see him as soon as you can, I do not see this as being scrap, nor a structural investigation, but I cannot accept this as it is out of my tolerance.

Thanks,

Jason Murdoch

**Qc. Coordinator**

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23/06/2009

